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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,214	03/05/2002	Eugene M. Levin	31257-UT	8615

25281 7590 10/19/2004

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EXAMINER

SEMUNEGUS, LULIT

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,214

Applicant(s)

LEVIN ET AL.

Examiner

Lulit Semunegus

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 2, 2004 have been fully considered but they are not persuasive. Applicant mainly argues the reference used, Forward et al (6,116,544), does not teach an electrical control system adapted to maintain the spinning of the electrodynamics tether at an average rate exceeding approximately two times an orbital angular rate with respect to inertial space. The (a) statements of intended use or field of use, (b) "adapted to" or "adapted for" clauses, (c) "wherein" clauses, or (d) "whereby" clauses are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ 641; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 512 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

As to the Applicant's argument that the Forward et al patent does not teach maintaining a continuous "spinning" of the tether, continuous spinning is not taught in any of the claims therefore is not given patentable weight. Forward et al teaches a spinning tether (806) that results in a useful adjustment to the orbit of spacecraft (col. 18, lines 57-64).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-7, 10-14, 17-18 and 20-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Forward et al (6,116,544).

Forward et al teach a tether system and a method of operating a tether system for space applications comprising: at least one electron collector (309,611); at least one electron emitter (313,613); a power system (311); an energy storage device (col. 34, line 14); a deployer (1100); at least one spinning electrodynamic multistrand tether (305,603) which can be a solar array (col. 9, line 38), electrically coupled to the power system (fig. 6-10) where electrical current inherently exists between the electron collector and the electron emitter and inherently capable of spinning at least approximately two times faster on average than an orbital revolution with respect to inertial space and is drivable in both directions and an electric control system (605) said system controlling the electric current in the tether to thereby control the spinning and increase average long-term orbit transfer or power generation rates, taking advantage of spinning (col. 17, lines 57-67, fig. 6-10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 8-9, 15-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forward et al (6,116,544).

In regards to claim 4, Forward et al teach all the limitations of claim 4 except two electron emitters and two electron collectors. At the time of the invention, it would have been obvious to one ordinary skilled in the art to have two electron emitters and collectors since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

In regards to claims 8-9 and 15-16, Forward et al do not expressly teach the solar array being thin-film or centrifugally-stabilized or the deployer being bound with a weak adhesive or bound with a vacuum grease. At the time of the invention, it would have been obvious to one ordinary skilled in the art to have a thin film or centrifugally-stabilized solar system or the deployed bound by either a weak adhesive or a vacuum grease since applicant has not disclosed that using either method of bounding solves any stated problem or is for any particular purposes and it appears that the invention would perform equally well with either method of bounding.

In regards to claim 19, Forward et al do not expressly teach the tether system comprising of a multiple tether where the tethers form a configuration selected from the group consisting of a triangular, polygonal or polyhedron configuration. At the time of the invention, it would have been obvious to one ordinarily skilled in the art to have multiple tether with different configuration tether since applicant has not disclosed that any configuration tether solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with triangular, polygonal or polyhedron tether configuration, furthermore, it would have been obvious to one ordinarily skilled in the art to have multiple tether since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lulit Semunegus whose telephone number is (703) 306-5960. The examiner can normally be reached on Mon-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3641

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10/9/04

Lulit Semunegus
Examiner
Art Unit 3641



MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER